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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,210	10/31/2003	Jemmy Sutanto Bintoro	GTRC132	2791
6980	7590	03/09/2006	EXAMINER	
TROUTMAN SANDERS LLP 600 PEACHTREE STREET, NE ATLANTA, GA 30308			DONOVAN, LINCOLN D	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/699,210	BINTORO ET AL.	
	Examiner	Art Unit	
	Lincoln Donovan	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02-27-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 1-11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, line 10, applicant should clarify what is intended by “the actuator being integrated circuit compatible.” Applicant has not defined any specific structural limitations.

In claim 13, applicant should clarify what is intended by “the actuator being CMOS compatible.” Applicant has not defined any specific structural limitations.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, as best understood in view of the rejections under USC 112, 2nd paragraph, is rejected under 35 U.S.C. 102(b) as being anticipated by Albarda et al. [US 5,029,805].

Albarda et al. disclose a valve arrangement [figure 2] comprising: a single substrate [1] upon which is fabricated a membrane [3] and a membrane activating member [11, 12] wherein the membrane is capable of moving between a first position in which flow is inhibited through a flow path and a second position enabling flow

through the flow path and the membrane activating mechanism being capable of moving the membrane between the first and second positions [figure 2, column 5, lines 28-51].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Biegelsen et al., figure 11 [US 6,123,316] in view of Albarda et al.

Regarding claims 1-2, 12 and 14, Biegelsen et al., figure 11, discloses an actuator for a microvalve [figure 11] comprising: a substrate assembly [202, 214] upon which is fabricated a membrane [242] and an electromagnetic membrane activating member [216] wherein the membrane is capable of moving between a first position in which flow is inhibited through a flow path and a second position enabling flow through the flow path and the membrane activating mechanism being capable of moving the membrane between the first and second positions [figure 11, column 12, line 56-column 13, line 11]

Biegelsen et al., figure 11, disclose everything claimed except the substrate assembly being formed of a single substrate [1].

Albarda et al. discloses a microvalve formed from a single substrate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a single substrate to form the substrate assembly of Biegelsen et al., figure 11, in order to simplify fabrication.

Regarding claim 3, Biegelsen et al., figure 11, discloses the substrate assembly including an orifice [226].

Regarding claims 4-7, Biegelsen et al., figure 11, discloses the use of a convex bistable membrane [figure 11, column 12, line 56-column 13, line 11].

Regarding claims 10-11, the specific energy applied to the actuator and the time to full activation would have been obvious design considerations based on the necessary operating times and working environment.

Regarding claim 13, the specific process used to form the substrate would have been an obvious design choice based on the specific environment of intended use.

Claims 8-9, 14-17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Biegelsen et al., figure 11, as applied to claim 1 above, and further in view of Biegelsen et al., figure 12 and Roshen et al. [US 5,475,353].

Regarding claim 8, Biegelsen et al., figure 11, disclose everything claimed except the membrane being located between a permanent magnet and the electromagnetic force generator.

Biegelsen et al., figure 12, discloses placing the membrane between a permalloy poled region [215, column 13, lines 12-42] and the electromagnetic actuator.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the poled region of Biegelsen et al., figure 12, in Biegelsen et al., figure 11, for the purpose of controlling response time.

Roshen et al. disclose the use of at least one permanent magnet [28] with electromagnetic microactuators [18] arranged to provide latching without induced force [abstract].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use permanent magnets for the poled magnetic region of Biegelsen et al., as modified, for the purpose of maintaining bistable operation.

Response to Arguments

Applicant's arguments filed 12-20-05 have been fully considered but they are not persuasive.

Applicant argues that the actuator of Albarda et al. is not integrated circuit compatible and the related energy consumption, actuation times, etc. would not have been an obvious design consideration based on the integrated circuit structure. Examiner disagrees. Applicant has not claimed any specific structure, or intent, for integrated circuit compatibility other than merely stating that the device is "integrated circuit compatible."

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Retter [US 5,921,382].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lincoln Donovan whose telephone number is 571-272-1988. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Enad Elvin can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Idd


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